

An Upgrade of the Aeroheating Software “MINIVER”

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Many software packages assist engineers with performing flight vehicle analysis, but some of these packages have gone many years without updates or significant improvements to their workflows. One such software, known as MINIVER, is a powerful yet lightweight tool that is used for aeroheating analyses. However, it is an aging program that has not seen major improvements within the past decade. As part of a collaborative effort with Florida Institute of Technology, MINIVER has received a major user interface overhaul, a change in program language, and will be continually receiving updates to improve its capabilities.

The user interface update includes a migration from a command-line interface to that of a graphical user interface supported in the Windows operating system. The organizational structure of the preprocessor has been transformed to clearly defined categories to provide ease of data entry. Helpful tools have been incorporated, including the ability to copy sections of cases as well as a generalized importer which aids in bulk data entry. A visual trajectory editor has been included, as well as a CAD Editor which allows the user to input simplified geometries in order to generate MINIVER cases in bulk.

To demonstrate its continued effectiveness, a case involving the JAXA OREX flight vehicle will be included, providing comparisons to captured flight data as well as other computational solutions. The most recent upgrade effort incorporated the use of the CAD Editor, and current efforts are investigating methods to link MINIVER projects with SINDA/Fluint and Thermal Desktop.